WASHINGTON STATE DEPARTMENT OF
Natural Resources

APPLICATION FOR RECLAMATION PERMIT
FORM SM-8A

Check appropriate box(es): ☒ new permit ☐ revision of existing permit ☐ transfer of permit ☐ expansion

NOTE: Do not attempt to complete this form until you have carefully read the accompanying instruction document (SM8AINST.PDF). Do not attempt to use this form as an MS Word Template unless you are familiar with the use of templates in MS Word.

1. NAME OF APPLICANT/PERMIT HOLDER(S)
Blue Mountain Leasing Company

2. MAILING ADDRESS
137 5th Street
Usk, WA 99180

3. Telephone **(509) 445-1732**
UBI No. **600-610-758**

4. NAME OF MINE
Hermann Pit

5. Street address and milepost of surface mine
unknown

RECEIVED
SEP 20 2006
Geology and Earth

6. Distance (miles)	7. Direction from	8. Nearest community
6 miles	**Northeast**	**Usk**

9. COUNTY **Pend Oreille**
No attachments will be accepted. Legal Description of permit area:

1/4	1/4	Section	Township	Range
NE	SW	10	33N	44E W.M.
SE	SW	10	33N	44E W.M.

10. TOTAL ACREAGE OF PERMIT AREA APPLIED FOR
(include all acreage to be disturbed by mining, setbacks, buffers, and associated activities during the life of the mine.)
40 acres

11. Do you or any person, partnership, or corporation associated with you now hold, or have you held, a surface mining operating or reclamation permit? ☒ yes ☐ no

If you answered yes to the above, please list:

Permit Number	Active Operation?		Reclamation current/complete?	
	Yes	No	Yes	No
71-0011778	☒	☐	☒	☐
	☐	☐	☐	☐
	☐	☐	☐	☐
	☐	☐	☐	☐

12. Are all of these mines now in compliance with RCW 78.44, WAC 332-18, and conditions of the permits? ☒ yes ☐ no

13. Have you ever had a surface mine operating or reclamation permit revoked? ☐ yes ☒ no

Have you ever had a reclamation security forfeited? ☐ yes ☒ no
If you answered yes to either of the above, list the permit number(s):

14. Type of proposed or existing mine: ☒ pit ☐ quarry
Material(s) to be mined: ☒ sand and gravel ☐ rock or stone ☐ clay ☐ metal ☐ limestone ☐ silica ☐ other ____

Deposit type: ☒ glacial ☐ river floodplain (alluvial) ☐ river channel deposits ☐ talus ☐ bedrock ☐ lode ☐ unknown ☐ other ____

15. Total Acreage and Depth of Permit Area: **40.0 acres**
(Include all acreage to be disturbed by mining, setbacks, buffers, and associated activities during the life of the mine.) (See Form SM-6.)

Total area disturbed will be **36.3** acres.
Area to be disturbed in next 36 months will be **10** acres.

Maximum vertical depth below pre-mining topographic grade is **180** feet.
Maximum depth of excavated mine floor is **2,800** feet relative to mean sea level

16. Expected start date of mining	17. Estimated number of years
Currently operational	**50**

18. Total quantity to be mined over life of mine (estimated):	19. Estimated annual production:
5,040,000 ☐ tons, or ☒ cu yds	**100,800** ☐ tons, or ☒ cu yds

20. Subsequent land use: ☐ industrial ☐ commercial ☐ residential ☐ agricultural ☒ forestry ☐ wetlands and lakes ☐ Other ____

Reclaimed elevation of floor of mine: **2,800** feet relative to mean sea level

Reclaimed elevation is shown on cross sections? ☒ yes ☐ no

Subsequent land use is compatible with County or Municipal comprehensive plan? ☒ yes ☐ no

County or Municipality Approval for Surface Mining (Form SM-6) attached? ☒ yes ☐ no

SEPA Checklist required? ☒ yes ☐ no

If any answers are no, explain: ____

21. Application fee for a new reclamation permit is herewith attached? ☒ yes ☐ no

CHECKLIST OF RECLAMATION STANDARDS

Permit area has been divided into segments for mining and a mining schedule has been developed? If no, explain:	☒ yes ☐ no
Permit area has been divided into segments for reclamation and a reclamation schedule has been developed? If no, explain:	☒ yes ☐ no

23. RECLAMATION

23A. Permit and Disturbed Area Boundaries

Boundary of the permit area has been marked on the ground with permanent boundary markers? Explain boundary markers: **Metal posts with tops painted florescent orange.**	☒ yes ☐ no

23B. Saving Topsoil, Subsoil, and Overburden for Reclamation

Thickness of topsoil is 1 feet
Thickness of subsoil is 0 feet
Depth to bedrock is 0 feet
Total volume of topsoil is 58,550 cubic yards
Total volume of subsoil is 0 cubic yards
Volume of stored topsoil/subsoil is ≈27,700 cubic yards and will require ≈1.5 acres for storage.

Storage areas are shown on maps and have been marked on the ground with permanent boundary markers?	☒ yes ☐ no
Topsoil will be salvaged? If no, explain:	☒ yes ☐ no
Topsoil and overburden will be moved to reclaim an adjacent depleted segment? If no, explain:	☒ yes ☐ no
Before materials are moved, vegetation will be cleared and drainage planned for soil storage areas? If no, explain:	☒ yes ☐ no
Soil storage areas will be stabilized with vegetation to prevent erosion if materials will be stored for more than one season? If no, explain:	☒ yes ☐ no

23C. Setbacks and Screens

Maximum depth of the mine will be 180 feet from 2,980 feet (*highest)* to 2,800 feet (*lowest*) elevation relative to mean sea level.
The maximum relief on site is from 3,040' elevation in the NW corner of the site to 2,800' on the postmining pit floor.
The setback for this site will be 30 feet wide.

Is a permanent, undisturbed buffer planned for this site? If no, explain:	☒ yes ☐ no
Setbacks are shown on maps and have been marked on the ground with permanent boundary markers? If no, explain:	☒ yes ☐ no

CHECKLIST OF RECLAMATION STANDARDS

Does this site have a backfilling plan that addresses the protection of adjacent property and how the final, stable slopes are to be achieved? ☐ yes ☒ no
If no, explain: **In-situ slopes will be cut 2:1 or gentler during mining operation.**

23D. Buffers to Protect Streams and Flood Plains

If yes, see "Additional Information Requirements for Flood Plain Mines." This document is included in the SM8AINST.PDF file.

A stream buffer of at least 200 feet has been marked on the ground with permanent boundary markers? ☐ yes ☒ no

A buffer of at least 200 feet from the 100-year flood plain has been marked on the ground with permanent boundary markers? ☐ yes ☒ no
If no, explain: **No 100-year flood plain is within 200 feet of the property.**

Copy of Shoreline Permit from local government or the Dept of Ecology is attached? **n/a** ☐ yes ☒ no

Hydraulic Project Approval from the Department of Fish and Wildlife is attached? **n/a** ☐ yes ☒ no

23E. Conservation Buffers

Conservation buffers will be established for the following purpose(s): (*Check all that apply*) **n/a**
☐ unstable slopes ☐ wildlife habitat ☐ water quality ☐ other _____

Describe the nature and configuration of the conservation buffer(s):

Conservation setbacks are shown on maps and have been marked on the ground with permanent boundary markers? **n/a** ☐ yes ☒ no

23F. Ground Water

High water table depth is ~ **2,764** feet ☒ relative to mean sea level, ☐ below original surface, or ☐ unknown.

Low water table depth is _____ feet ☐ relative to mean sea level, ☐ below original surface, or ☒ unknown.

Annual fluctuation of water table is from _____ feet on _____ to _____ feet on _____.

Direction of ground water flow: **Unknown, but likely following the general south to southwest direction of the Skookum Creek drainage at large.**

Are well logs attached? ☒ yes ☐ no

Is the aquifer perched? ☐ yes ☒ no

Is the shallowest aquifer: ☐ confined ☒ unconfined

The site will be mined: ☐ wet ☒ dry ☐ both

Describe mining method: **Cut Slope Method**

The site is in a: **n/a**
☐ critical aquifer recharge area ☐ sole source aquifer ☐ public water supply watershed
☐ wellhead protection area ☐ special protection area ☐ designated aquifer protection area

Ground water study attached? ☐ yes ☒ no
If yes, see "Additional Information Requirements for Hydrologically Sensitive Areas." This document is included in the SM8AINST.PDF file.
If no, explain: **Will not be mining into the water table, dry pit only.**

23G. Archeology

Are archeological/cultural resource sites present? **None known** ☐ yes ☐ no
If **yes**, describe how you will protect these resources:

CHECKLIST OF RECLAMATION STANDARDS

24. MINING PRACTICES TO FACILITATE RECLAMATION

24A. Soil Replacement

Topsoil will be saved? ☒ yes ☐ no
If no, explain:

Up to 4 feet of topsoil and (or) subsoil will be restored? ☐ yes ☒ no
If no, explain: **There is only about one foot of soil above merchantable product.**

Topsoil will be restored and seedbeds prepared as necessary to promote effective revegetation and to stabilize slopes and mine floor? ☒ yes ☐ no
If "yes" give details, if "no", explain: **Refer to narrative.**

Subsoil will be replaced to an approximate depth of 0 feet on the pit floor and a depth of 0 feet on slopes.

Topsoil will be replaced to an approximate depth of 1 foot on the pit floor and a depth of 1 foot on slopes.

Topsoil will be distributed evenly over the site? ☒ yes ☐ no
If no, explain:

If topsoil is in short supply, it will be strategically placed in depressions and low areas in adequate thickness to conserve moisture and promote revegetation? ☒ yes ☐ no
If no, explain:

Topsoil will be moved when conditions are not overly wet or dry? ☒ yes ☐ no
If no, explain:

Topsoil will be imported? ☐ yes ☒ no
If yes, describe source. If no, explain: **Enough topsoil exists on site for reclamation.**

Synthetic topsoil made from compost, biosolids, or other amendments will be used and (or) made on site to supplement existing topsoil? ☐ yes ☒ no
If yes, explain:

Materials such as till, loess, and (or) silt are available on site that could be used to supplement topsoil for reclamation. ☐ yes ☒ no
If yes, explain:

Silt from settling ponds or a filter press will be used for reclamation? ☐ yes ☒ no
If yes, explain:

CHECKLIST OF RECLAMATION STANDARDS

Settling pond clay slurries will be pumped or hauled to other segments for reclamation? ☐ yes ☒ no
If yes, explain:

Topsoil will be replaced with equipment that will minimize compaction, or it will be plowed, disked, or ripped following placement? ☒ yes ☐ no
If no, explain:

Topsoil will be immediately stabilized with grasses and legumes to prevent loss by erosion, slumping, or crusting? ☐ yes ☒ no
If no, explain: **Not necessary, due to well-drained gravely soil and do not want to introduce competitive species with reforestation plan.**

Topsoil stockpile areas are shown on maps and will be marked on the ground with permanent boundary markers to protect from loss? ☒ yes ☐ no
If no, explain:

Segmental topsoil removal and replacement is shown on maps? ☒ yes ☐ no
If no, explain:

Topsoil salvage and replacement plan included? ☒ yes ☐ no
If no, explain:

24B. Removal of Vegetation

Vegetation will be removed sequentially from areas to be mined to prevent unnecessary erosion? ☒ yes ☐ no
If no, explain:

Small trees and other transplantable vegetation will be salvaged for use in revegetating other segments? ☐ yes ☒ no
If yes, give details. If no, explain: **n/a See narrative.**

Wood and other organic debris will be:
☐ recycled ☐ removed from site ☐ chipped ☒ burned ☐ buried ☐ used to synthesize topsoil or mulch
☐ other (*explain*)
Solid waste disposal, burning, and land use permits are attached? ☐ yes ☒ no

Some coarse wood (logs, stumps) and other large debris will be salvaged for fish and wildlife habitats? ☐ yes ☒ no
If yes, give details. If no, explain:

24C. Erosion control for Reclamation

Pit floor will slope at gentle angles toward highwall, sediment retention pond, or proper drainage? ☒ yes ☐ no
If yes, give details. If no, explain: **Refer to narrative.**

Revegetation, sheeting, and (or) matting will be used to protect areas susceptible to erosion? ☒ yes ☐ no

CHECKLIST OF RECLAMATION STANDARDS

If yes, give details. If no, explain: **Revegetation will be utilized, refer to narrative.**

Water control systems used for erosion control during segmental reclamation will:

Divert clean water around pit?	☒ yes	☐ no
Trap sediment-laden runoff before it enters a stream?	☒ yes	☐ no
Result in essentially natural conditions of volume, velocity, and turbidity?	☒ yes	☐ no
Handle a 25-year, 24-hour peak event?	☒ yes	☐ no
(Have you attached calculation?)	☐ yes	☒ no
Be removed or reclaimed?	☐ yes	☒ no

If any answers are no, explain: **Pit will contain all runoff within the permit boundary, refer to narrative and figures.**

Will any water control systems be removed upon final reclamation? ☐ yes ☒ no
If yes, explain:

Water control measure will be established to prevent erosion of setbacks and neighboring properties? ☒ yes ☐ no
If yes, give details. If no, explain: **Refer to narrative.**

Storm-water conveyance ditches and channels will be lined with vegetation or riprap? ☒ yes ☐ no
If yes, give details. If no, explain: **Ditches will be constructed within insitu materials if necessary.**

Natural and other drainage channels will be kept free of equipment, wastes, stockpiles, and overburden? ☒ yes ☐ no
If no, explain:

25. RECLAMATION TOPOGRAPHY

25A. Final Slopes

Final slopes will be created using the cut-and-fill method? ☐ yes ☒ no
Explain procedure to be used: **Cut Slope Method.**

Slopes will be created by mining to the final slope using the cut method? ☒ yes ☐ no
Explain procedure to be used: **2:1 slopes will be constructed as mining progresses.**

Slopes will vary in steepness? ☒ yes ☐ no
If no, explain:

Slopes will have a sinuous appearance in both profile and plan view? ☒ yes ☐ no
If no, explain:

Large rectilinear (that is, right angle, or straight, planar) areas will be eliminated? ☒ yes ☐ no

If no, explain:

Where reasonable, tracks of the final equipment pass will be preserved and oriented to trap moisture, soil, and seeds, and to inhibit erosion? ☒ yes ☐ no
If no, explain:

25B. Slope Requirements for Pits and Overburden/Waste Rock Dumps (non-saleable products)

If the mine is a quarry or in hard rock, skip to Quarry section(25C).

Slopes will vary between 2 and 3 feet horizontal to 1 foot vertical or flatter, except in limited areas where steeper slopes are necessary to create sinuous topography and control drainage? ☒ yes ☐ no
If no, explain:

For pits, slopes will not exceed 2 feet horizontal to 1 foot vertical except as necessary to blend with adjacent natural slopes? ☒ yes ☐ no
Give details: **Refer to narrative.**

Slope stability analysis required? ☐ yes ☒ no
If yes, see "Additional Information Requirements for Mines with Potentially Unstable or Steep Slopes." This document is included in the SM8AINST.PDF file.
Slope stability analysis provided by _____

25C. Slope Requirements for Quarries and Hardrock Metal Mines

If mine is a pit in unconsolidated materials covered by Section 25B, go to Section 25D

Check the appropriate box(es)
☐ Slopes will not exceed 2 feet horizontal to 1 foot vertical.
☐ Slopes steeper than 1 foot horizontal to 1 foot vertical are an acceptable subsequent land use as confirmed on Form SM-6.
☐ Hazardous slopes or cliffs are indigenous to the immediate area and already present a potential threat to human life. Photo and maps attached to document presence of cliffs.
☐ Geologic or topographic characteristics of the site preclude slopes being reclaimed at a flatter angle and are an acceptable subsequent land use as confirmed on Form SM-6.

Slope stability analysis required? ☐ yes ☐ no
If yes, see "Additional Information Requirements for Mines with Potentially Unstable or Steep Slopes." This document is included in the SM8AINST.PDF file.
Slope stability analysis provided by _____

Measures will be taken to limit access to the top and bottom of hazardous slopes? ☐ yes ☐ no
Describe measures, or if no, explain:

Selective blasting will be used to remove benches and walls and to create chutes, buttresses, spurs, scree slopes, and rough cliff faces that appear natural? ☐ yes ☐ no
Describe procedures, or if no, explain:

Reclamation blasting will be used to reduce the entire highwall to a scree or rubble slope less than 2 feet horizontal to 1 foot vertical? ☐ yes ☐ no
Blasting plan is attached? ☐ yes ☐ no
If no, explain:

Access to benches will be maintained for reclamation blasting? ☐ yes ☐ no

If no, explain:

Small portions of benches will be left to provide habitat for raptors and other cliff-dwelling birds?	☐ yes ☐ no

25D. Backfilling

Slopes will require backfilling?	☐ yes ☒ no
Depth of backfilling is 0 feet.	
Slope stability compaction analysis required?	☐ yes ☒ no
Compaction analysis provided by	
Backfilling plan and (or) permits are attached?	☐ yes ☒ no
If no, explain: **n/a**	
Backfilling will be done with overburden material after topsoil has been separated?	☐ yes ☒ no
If no, describe composition and source of backfill material: **n/a**	
Explain method of placement of fill: **n/a**	
Locations of stockpiles are shown on maps and will be marked on the ground with permanent boundary markers?	☒ yes ☐ no
Will backfill be imported?	☐ yes ☒ no
If yes, give volumes needed to meet reclamation plan:	
Areas to be backfilled are shown on maps?	☐ yes ☒ no
If no, explain: **n/a**	
All grading/backfilling will be done with clean, inert, non-organic solids?	☐ yes ☒ no
If yes, give details. If no, explain: **n/a**	
Backfilled slopes will be compacted?	☐ yes ☒ no
If yes, give details. If no, explain: **n/a**	
Will you be backfilling into water?	☐ yes ☒ no
If yes, is slope stability analysis attached?	☐ yes ☐ no
If yes, describe method:	

25E. Mine Floors

Flat areas will be formed into gently rolling mounds?	☒ yes ☐ no
If yes, give details. If no, Explain: **Flat areas will not be left completely planar, but will be graded into gently rolling mounds to blend with sinuous topography.**	

CHECKLIST OF RECLAMATION STANDARDS

Mine floor will be gently graded into sinuous drainage channels to preclude sheetwash erosion during intense precipitation? ☐ yes ☒ no
If yes, give details. If no, explain: **Mine floor will be incised and in-situ material is highly permeable.**

Mine floor and other compacted areas will be bulldozed, plowed, ripped, or blasted to foster revegetation? ☒ yes ☐ no
If yes, give details. If no, explain: **Ripped.**

25F. Lakes, Ponds, and Wetlands

Is water currently present in the area or will the mining penetrate the water table? ☐ yes ☒ no
If no, go to Section 25G.

Reclaimed areas below the permanent low water table in soil, sand, gravel, and other unconsolidated material will have a slope no steeper than 1.5 feet horizontal to 1 foot vertical? ☐ yes ☐ no
If yes, give details. If no, explain:

If not already present, soils, silts, and clay-bearing material will be placed below water level to enhance revegetation? ☐ yes ☐ no
If yes, give details. If no, explain:

Some parts of pond and lake banks will be shaped so that a person can escape from the water? ☐ yes ☐ no
If yes, give details. If no, explain:

Armored spillways or other measures to prevent undesirable overflow or seepage will be provided to stabilize bodies of water and adjacent slopes? ☐ yes ☐ no
If yes, give details. If no, explain:

Wildlife habitat will be developed, incorporating such measures as:
- Sinuous and irregular shorelines? ☐ yes ☐ no
- Varied water depths? ☐ yes ☐ no
- Shallow areas less than 18 inches deep? ☐ yes ☐ no
- Islands and peninsulas? ☐ yes ☐ no

Give details:

Ponds or basins will:
- Be located in stable areas? ☐ yes ☐ no
- Have sufficient volume for expected runoff? ☐ yes ☐ no
- Have an emergency overflow spillway? ☐ yes ☐ no
- Spillways and outfalls will be protected (for example, rock armor) to prevent failure and erosion? ☐ yes ☐ no

If any answers are no, explain:

CHECKLIST OF RECLAMATION STANDARDS

Proper measures will be taken to prevent seepage from water impoundments that could cause flooding outside the permitted area or adversely affect the stability of impoundment dams or adjacent slopes? ☐ yes ☐ no
If yes, give details. If no, explain:

Written approval from other agencies with jurisdiction to regulate impoundment of water is attached? ☐ yes ☐ no
If no, explain:

25G. FINAL DRAINAGE CONFIGURATION

Drainage will be capable of carrying the peak flow of the 25-year, 24-hour precipitation event (*Data are available at DNR Region offices*) ☒ yes ☐ no
If yes, are calculations attached? ☐ yes ☒ no
If yes, give details. If no, explain: **Refer to narrative.**

Drainages will be constructed on each reclaimed segment to control surface water, erosion, and siltation? ☒ yes ☐ no
Clean runoff is directed to a safe outlet? **No outlet.** ☐ yes ☒ no
If either yes, give details. If no, explain: **Stormwater will be allowed to infiltrate through the contained mine floor.**

Are these shown on maps? ☐ yes ☒ no

The grade of ditches and channels will be constructed to limit erosion and siltation? ☒ yes ☐ no
If yes, give details. If no, explain: **If necessary, no ditching is proposed.**

Natural-appearing drainage channels will be established upon reclamation? ☒ yes ☐ no
If yes, give details. If no, explain: **Only if necessary, refer to narrative.**

26. SITE CLEANUP AND PREPARATION FOR REVEGETATION

26A. Dealing with Hazardous Materials

Hazardous materials are present at the mine site? ☐ yes ☒ no
If no, go to Section 26B

The final ground surface drains away from any hazardous natural materials? ☐ yes ☐ no
If yes, give details. If no, explain: **n/a**

Plan for handling hazardous mineral wastes indigenous to the site is attached? **n/a** ☐ yes ☐ no
If no, written approval from all appropriate solid waste regulatory agencies attached? ☐ yes ☐ no

26B. Removal of Debris

All debris (garbage, 'bone piles', treated wood, old mining equipment, etc.) will be removed from the mine site? ☒ yes ☐ no
All sheds, scale houses, and other structures will be removed from the site? ☒ yes ☐ no
If either answer is yes, give details. If no, explain: **There are no structures currently on site or planned for the site.**

CHECKLIST OF RECLAMATION STANDARDS

27. REVEGETATION

The mine site is in: ☒ eastern Washington ☐ western Washington

The mine site is: ☐ wet ☒ dry?

The average precipitation is **27 inches** per year.

Revegetation will start during the first proper growing season (fall for grasses and legumes, fall or late winter for trees and shrubs) following restoration of slopes? ☒ yes ☐ no
If yes, give details. If no, explain: **Refer to narrative.**

Test plots will be used to determine optimum vegetation plans? ☐ yes ☒ no

The site will not be revegetated because: **n/a**

☐ It is a rural area with a rainfall exceeding 30 inches annually and erosion will not be a problem (requires approval of DNR).

☐ Demonstration plots and areas will be used to show that active revegetation is not necessary.

☐ Revegetation is inappropriate for the approved subsequent use of this surface mine.

Explain:

Documentation is attached? ☐ yes ☐ no

27A. Recommended Pioneer Species

In the Sections below, check the species that will be planted at your mine site:
**** indicates nitrogen-fixing species***

Western Washington Dry Areas

☐ alfalfa*	☐ Lupine*	☐ clover*	☐ orchard grass
☐ cereal rye	☐ perennial rye	☐ colonial bent grass	☐ ponderosa pine
☐ creeping red fescue	☐ red alder*	☐ Douglas fir	☐ shore pine
☐ ground cover	☐ shrubs	☐ other	

Western Washington Wet Areas

☐ birdsfoot trefoil	☐ sedges	☐ cedar	☐ tubers
☐ cottonwood	☐ wetland grasses	☐ creeping red fescue	☐ willow
☐ red alder*	☐ other		

Eastern Washington Dry Areas

☐ alder*	☐ grasses	☐ alfalfa*	☐ juniper
☐ black locust	☐ lodgepole pine	☐ clover	☐ lupine*
☐ deciduous trees	☒ ponderosa pine	☐ shrubs	☐ deep-rooted ground cover
☐ diverse evergreens	☒ other **W. Larch**		

Eastern Washington Wet Areas

☐ alder*	☐ cottonwood	☐ poplar	☐ sedges
☐ serviceberry	☐ tubers	☐ willow	
☐ other			

Give planting details (stems/acres of trees and shrubs, see Forest Practices manual; lbs/acre of grass, legume, or forb mixture):
Refer to narrative.

CHECKLIST OF RECLAMATION STANDARDS

Describe weed control plan:
Refer to narrative.

27B. Planting Techniques

Revegetation at this site will require:

Ripping and tilling?	☒ yes	☐ no
Blasting to create permeability?	☐ yes	☒ no
Mulching?	☐ yes	☒ no
Irrigation?	☐ yes	☒ no
Fertilization?	☐ yes	☒ no
Importation of clay- or humus-bearing soils?	☐ yes	☒ no
Other soil conditioners or amendments?	☐ yes	☒ no

Give details:

Trees and shrubs will be planted in topsoil or in subsoil amended with generous amounts of organic matter? ☒ yes ☐ no
If yes, give details. If no, explain: **Refer to narrative.**

Mulch will be piled around the base of trees and shrubs?	☐ yes	☒ no
High quality stock will be used?	☒ yes	☐ no
Trees and shrubs will be planted while they are dormant?	☒ yes	☐ no
Stock will be properly handled, kept cool and moist, and planted as soon as possible?	☒ yes	☐ no
Seeds will be covered with topsoil or mulch no deeper than one-half inch?	☒ yes	☐ no

If any answers are no, explain: **No mulch is necessary.**

28. Permit Checklist

All required maps are attached (***See Instructions for detailed requirements***)?	☒ yes	☐ no
All required cross-sections are attached (***See Instructions for detailed requirements***)?	☒ yes	☐ no
Geologic map attached (if required)?	☐ yes	☒ no
All documents submitted have the date, the name and address of the permit holder, and the application number on every page of the material?	☒ yes	☐ no
The plan contains predominantly relevant information?	☒ yes	☐ no
Have you completed the SM-6 and has it been signed by the local jurisdiction?	☒ yes	☐ no
Have you provided the SEPA checklist?	☒ yes	☐ no
Have you provided a copy of the SEPA Determination (DNS, MDNS, or DS)?	☒ yes	☐ no
Have you attached photographs?	☐ yes	☒ no
Are additional supplemental studies included?	☐ yes	☒ no

If yes, check the appropriate box(es) below:

☐ Archeological ☐ Geohydrologic ☐ Backfill ☐ Slope stability
☐ Topsoil ☐ Flood plain ☐ Conservational ☐ Vegetation
☐ Other

Other permits required? ☒ yes no
If yes, check the appropriate box(es) below:

☐ Shoreline permit ☐ Water Discharge Permit ☐ Solid Waste Permit
☒ Air Quality Permit ☒ NPDS or General Discharge Permit ☐ Hydraulic Project Approval
☐ Special or Conditional Use Permit ☐ Other

CHECKLIST OF RECLAMATION STANDARDS

When signed by the applicant and approved by the Department of Natural Resources, this document and the associated maps, cross sections, reclamation narrative, and other attachments will be the approved reclamation plan for this permit that the permit holder must follow. Significant variations from the approved reclamation plan may require that a new plan be submitted to the Department for approval.

The applicant shall be considered as the permit holder for this surface mine and shall be responsible for compliance with Chapter 78.44 RCW, Chapter 332-18 WAC, the approved reclamation plan and attachments, and the conditions of the permit if issued by the Department of Natural Resources.

I hereby agree to comply with this plan. *Signature of applicant or company representative*	Name and Title of Company Representative (*Please print*) Steven E. Herman General Partner	Date signed 9/8/06

SURFACE OWNERSHIP	OWERSHIP OF RIGHTS TO REMOVE MINERALS BY SURFACE MINING
Give names, addresses, and signatures of all individuals with possessory interest in land. (attach signed copies of this page if more than one) I verify that the applicant has my permission to mine from my land. *Signature of landowner(s)* — *Date Signed* 9/8/06	Give names, addresses, and signatures of all individuals with rights. (attach signed copies of this page if more than one) I verify that the applicant has my permission to mine this land. *Signature of rights owner(s)* — *Date Signed* 9/8/06
I hereby verify that I have seen and approved this plan. *Signature of landowner(s)* — *Date Signed* 9/8/06	I hereby verify that I have seen and approved this plan. *Signature of rights owner(s)* — *Date Signed* 9/8/06

FOR DEPARTMENTAL USE ONLY

Date accepted	Accepted by:	Title:	Reclamation Permit No.

Comments by Department:

RECEIVED
SEP 11 2006
Geology and Earth

RECEIVED
SEP 20 2006
Geology and Earth

1- INTRODUCTION

On behalf of Blue Mountain Leasing Company, Ecological Land Services, Inc. (ELS) has prepared this surface mine reclamation plan for the Washington State Department of Natural Resources (DNR), Division of Geology and Earth Resources. This reclamation plan, including the narrative, DNR forms, maps and figures, is intended to satisfy the DNR requirements pursuant to *Chapter 78.44 Revised Code of Washington (RCW).* DNR Forms SM-6 and SM-8A are included.

2- SITE DESCRIPTION

2.1- Site Location

The proposed 40 acre Hermann Pit is located approximately 5 miles northeast of Usk along Kings Lake Road, Pend Oreille County, Washington. The site's legal description is as follows: portions of the NE 1/4 and SE 1/4 of the SW 1/4 in Section 10, Township 33 North, Range 44 East, Willamette Meridian (Figure 1). The property is made up of a single parcel 443310 00 0006.

2.2- Background

The 40 acre parcel was purchased in July 2004 by Blue Mountain Leasing Company. Gravel extraction began in 2005, utilizing the site as a sand and gravel borrow pit. A well established haul road exists off of Kings Lake Road which provides sole access to the pit. Approximately 7.1 acres of the site have been disturbed by mining to date. The undisturbed portion of the project site and surrounding parcels were a part of a much larger tract of forest resource land. The surrounding parcels continue to be used as forest resource land and seasonal residences. The Forest Service owns and operates a sand and gravel pit less than half a mile south of the proposed Hermann Pit.

2.3- Subsequent Use

The subsequent use for this site is forestry. Following mining, the site will be reclaimed by contouring the slopes to a sinuous and natural topography and reforested with conifer trees as prescribed in Section 6. The subsequent use is consistent with land uses adjacent to the site and surrounding area, which include woodlands, mining, and rural residential. The subsequent use is approved by Pend Oreille County per the DNR SM-6 Form, *County or Municipality Approval For Surface Mining* (attached).

3- GEOLOGY AND HYDROGEOLOGY

3.1- Geology

The site is located within the Skookum Creek drainage about 2 miles east of the Pend Oreille River. The site is situated within a region characterized by a great variety of rock types and sedimentary deposits. The site occupies a portion of a glacial deposit which is surrounded by volcanic rocks, intrusive rock bodies, and sedimentary rocks. The deposits specific to the site are glacial till and outwash. The till makes up the majority of the material on site and is composed of unstratified to poorly stratified deposits of subangular to rounded pebbles, cobbles, and boulders in an unsorted matrix of sand, silt, and clay. Glacial outwash borders the till to the northwest and is likely found in that portion of the property. It differs from the till only in that the sediments are more stratified due to the mechanics of their deposition. A variety of rock types border the till and outwash to the northwest, west, and southwest. These may also be found on site to a limited extent. They include tuff, quartzite, conglomerate, and metasedimentary rocks. The conglomerate makes up much of the ridge dividing the Skookum Creek drainage from the Pend Oreille River.

The gravel exposed in the active pit on site is in beds of varying thickness (on the order of feet) that dip in a general southerly direction at an angle of approximately 30 degrees. The basal contact of the gravel deposit was determined by LFR Environmental Management & Consulting Engineering (LFR) to be striking approximately N40°W and dipping approximately 9°NE when assumed continuous and planar. Where the mine floor intersects and follows this contact, the slope will be shallower than 2H:1V (see Figures 5 and 6).

3.2- Hydrogeology

Three groundwater wells have been drilled on site. A fourth exists off site to the south. According to an analysis of these wells conducted by LFR (2006), the reach of Skookum Creek paralleling the mine site is likely a losing reach. Groundwater is closest to the original topographic surface in the southeast portion of the proposed mine boundary where it is approximately at elevation 2,764 MSL (LFR, 2006). Mineral extraction will be limited by the basal contact of the resource and/or cease around elevation 2,800 MSL (Figures 5 and 6) which is greater than 30 feet above the highest elevation of the groundwater surface.

An intermittent spring observed in the pit high wall appears to be water originating with an intermittent stream flowing to the west of the property (LFR, 2006). When flowing, the stream loses its water over a short reach. This water likely moves downward through the dipping sand and gravel until it collects along a clay layer and eventually daylights in the pit as observed on the high wall. This water immediately infiltrates upon reaching the

pit floor. As mining progresses, this through-flow will continue to be allowed to collect on the pit floor and infiltrate.

4- MINING AND RECLAMATION

4.1- Mining and Reclamation

The permit boundary (and property boundary) for this site includes 40 acres. The overall mining disturbance area is approximately 36.3 acres, which excludes a 30 foot setback from the permit boundary. The site will be mined in three segments. Mining will continue in the southeast corner of the property moving toward the western boundary. It will progress northward from there into the second segment. The third segment will involve the removal of in-situ material left along the eastern boundary as noise abatement and visual screen. Reclamation will occur contemporaneously with mining as final cut slopes are created.

Maximum depth of mining at any given point is 180 feet below ground surface (bgs) from elevation 2,980 mean sea level (MSL) to 2,800 MSL. Maximum elevation difference within the mining disturbance boundary is 240 feet bgs, from the highest elevation of 3040 MSL located along the northwestern mine boundary to the lowest elevation, which will be excavated to 2,800 MSL feet. Refer to Figures 4 and 5.

A sinuous post-mining topography will be constructed during mining operations where slopes will be excavated to no steeper than 2H:1V using a cut-slope method of mining. Where the mine floor intersects and follows the basal contact of the gravel layer, the slope will be shallower than 2H:1V. At no point will mining occur deeper than elevation 2,800 MSL (see figures 5 and 6). This will generate a flat floor known to be greater than 30 feet above the groundwater elevation. No backfill will be required to reclaim the site using this method of mining, leaving final slopes constructed within insitu material as part of the mining process. Figure 5 illustrates the final configuration of the reclaimed mine area upon completion of mining activities. The perimeter of the mining disturbance area is sinuously joined to the existing contours surrounding the site (Figure 5).

4.2- Topsoil and Subsoil Plan

USDA Soil Conservation Service Soil Survey of Pend Oreille County Area, Washington, maps soil on and around the project area as Bonner gravelly silt loam, 0 to 10 percent slopes and Typic Xerorthents, 30 to 65 percent slopes. Soils in the Bonner series generally consist of well-drained soils on terraces formed in a mantle of volcanic ash and loess over glacial outwash of mixed mineralogy. Typic Xerorthents are well-drained soils formed in glacial outwash of mixed mineralogy on terrace escarpments. There are only about 12 inches of topsoil overlying merchantable product on this site. The soil survey supports this observation for both soils, citing that parent material becomes a part of the profile below 12 inches (USDA, 1992). Using an average salvage depth of 12 inches (and deeper where more is found), it should be possible to reclaim the disturbed

area to an approximate topsoil depth of one foot. Refer to Table 4.2 Soils Budget. No subsoil will be restored as the topsoil on site directly overlies the gravely substrate.

Approximately 10,000 cubic yards of topsoil has been stockpiled along the south and southeastern boundaries of the site (included in Mining Segment 1). This topsoil includes generous amounts of organic matter. The remaining topsoil will be removed as mining progresses incrementally through a segment, with storage planned around the perimeters. Reclamation will occur contemporaneously with mining as final cut slopes are created reducing the topsoil storage capacity needed at any single period of time.

After slopes are excavated and shaped to final topography, the salvaged rooting medium (topsoil) will be replaced for revegetation. The replaced rooting medium will be ripped parallel to the contour of the reclaimed slopes, on the pit floor and staging areas to promote effective revegetation. Some micro relief such as shallow depressions and ridges created through ripping will remain on reclaimed surfaces, assisting in germination and sediment capture during initial years of reclamation. Topsoil material will be handled only during dry conditions. Where ripping is not practical, replaced soils will be track walked perpendicular to slopes to minimize erosion prior to reforesting.

TABLE 4.2
SOILS BUDGET

Mine Segment	Acres	Reclamation Phase	Acres	Estimated topsoil volume needed, yd^3	Estimated topsoil excess/shortage, yd^3
M1	17.2	R1	17.2	27,740	0 / 0
M2	15.9	R2	15.9	25,650	0 / 0
M3	3.2	R3	3.2	5,160	0 / 0
Total	36.3		36.3	58,550	0 / 0

Conditions
Maximum mining depth: 180 feet, from 2,980 MSL to 2,800 MSL. The maximum relief within the mine extraction area is 240 between the 3040 feet to 2,800 elevations (Figures 4 & 5).
Mineral extraction: Actual mine extraction area of 36.3 acres.
Permit boundary/disturbance acreage: 40.0 acres accounting for extraction, processing, setbacks and haul road.
Material salvage: Based upon USCS soils classifications, about 12 inches of material may be salvageable across the permit area. Material salvage is estimated excluding the 3.7 acres of 30 foot buffer.
Replacement depth: Planned replacement depth of topsoil is an average of 12 inches.

4.3- Setbacks

A 30 foot setback will be maintained around the property and permit boundary (one in the same). This setback is not a reclamation setback, but will be a 30 foot access setback. In addition to the setback, mine segment three (which parallels Kings Lake Road) will serve as a visual and noise abatement berm until the final stage of material extraction.

5- EROSION CONTROL

5.1- Existing Stormwater

Currently all stormwater infiltrates on site and/or collects on the pit floor before it infiltrates and or evaporates. Stormwater will continue to infiltrate on site. As the pit floor lowers and enlarges through time any potential runoff will be fully contained within the pit side slopes. No stormwater is expected to leave the site.

5.2 – Postmining Stormwater

Postmining topography will collect all potential stormwater and transmit it down slope where it will be captured on the floor of the mine and infiltrate (Figure 5 & 6).

6- REVEGETATION PLAN

Native upland forested communities will consist of mixed conifers, consisting of 60 percent Western Larch and 40 percent Ponderosa Pine. This revegetation scheme will be consistent with the typical reforested areas around the site. Forested communities will be planted at 300 trees/acre or approximately 12 foot by 12 foot spacing. Reclaimed phases within designated segments of mining will be sown to develop contemporaneous reclamation as mining progresses. These areas will be maintained to prevent invasion of noxious weeds or deleterious vegetation by spot spraying herbicides as needed.

Preserving mature, existing vegetation within the setbacks and undisturbed portions of the site within the permit boundary will maintain existing wildlife habitat, wildlife corridors and allow for natural vegetation propagation to occur. A mixture of shrubs and trees, which presently border the mining disturbance area, will remain on-site. Table 6.1 identifies vegetation to be installed to establish pre-existing flora, wildlife habitat, slope protection and erosion control. Bareroot trees will be supplied by a local nursery and from within the proper seed zone.

TABLE 6.1

Upland Forest Revegetation Specifications

Species Common Name	Scientific Name	Planting Method	Planting Density	Planting Season
Western Larch	*Larix occidentalis*	Bareroot	300 per acre	Spring
Ponderosa Pine	*Pinus ponderosa*	Bareroot	300 per acre	Spring

REFERENCES

LFR Environmental Management & Consulting. Hydrogeologic Reconnaissance and Evaluation of the Hermann Pit near Usk, Washington. August 3, 2006.

United States Department of Agriculture (USDA), Soil Conservation Service (SCS). 1992. Soil Survey of Pend Oreille County Area. http://www.or.nrcs.usda.gov/pnw_soil/wa_reports.html

Stoffel, K. L.; Joseph, N.L.; Waggoner, S.Z.; Gulick, C.W.; Korosec, M.A.; Bunning, B.B., *Geologic Map of Washington – Northeast Quadrant.* Washington State Department of Natural Resources, Division of Geology and Earth Resources. Geologic Map GM-39. 1991.

Washington Department of Ecology, On-line well log viewer, http://apps.ecy.wa.gov/welllog/

LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. There are no other warranties, express or implied. The services performed were consistent with our agreement with our client. This report is prepared solely for the use of our client and may not be used or relied upon by a third party for any purpose. Any such use or reliance will be at such party's risk.

The opinions and recommendations contained in this report apply to conditions existing when services were performed. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report. ELS does not warrant the accuracy of supplemental information incorporated in this report that was supplied by others.

WASHINGTON STATE DEPARTMENT OF
Natural Resources

COUNTY OR MUNICIPALITY APPROVAL FOR SURFACE MINING (Form SM-6)

NAME OF COMPANY OR INDIVIDUAL APPLICANT(S)
Same as name of the exploration permit holder. *(Type or print in ink.)*

Blue Mountain Leasing Company

MAILING ADDRESS

137 5th Street
Usk, WA 99180

Telephone (509) 445-1732

TOTAL ACREAGE AND DEPTH OF PERMIT AREA
(Include all acreage to be disturbed by mining, setbacks, and buffers, and associated activities during the life of the mine.) *(See SM-8A.)*

Total area disturbed will be 40 acres

Maximum vertical depth below pre-mining topographic grade is 180 feet

Maximum depth of excavated mine floor is 2,800 feet relative to mean sea level

COUNTY Pend Orielle

No attachments will be accepted. Legal description of permit area:

1/4	1/4	Section	Township	Range
NE	SW	10	33N	44E W.M.
SE	SW	10	33N	44E W.M.

Proposed subsequent use of site upon completion of reclamation

Forestry

RECEIVED
SEP 20 2006
Geology and Earth

Signature of company representative or individual applicant(s)	Name and title of company representative *(please print)*	Date signed
Steven E. Herrmann	Steven E. Herrmann General Partner	9/8/06

TO BE COMPLETED BY THE APPROPRIATE COUNTY OR MUNICIPALITY:

Please answer the following questions 'yes' or 'no'.

	Yes	No
1. Has the proposed surface mine been approved under local zoning and land-use regulations?	X	
2. Is the proposed subsequent use of the land after reclamation consistent with the local land-use plan/designation?	X	

When complete, return this form to the appropriate Department of Natural Resources regional office.

Name of planning director or administrative official *(please print)*

Ron Curren

Signature

Ron Curren

Title *(please print)*

Public Works Director

Address

Pend Oreille County
Public Works Depart.
P.O. Box 5040
Newport, WA. 99156

Telephone (509) 447-4513

Date 09/08/06

FOR DEPARTMENT USE ONLY:

DNR Reclamation Permit No. 13067

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Construction/Decommission *("x" in circle)*

(•) Construction

( ) Decommission *ORIGINAL INSTALLATION Notice of Intent Number* W 246114

CURRENT
Notice of Intent No. W 246114

Unique Ecology Well ID Tag No. AEK 340

Water Right Permit No.

Property Owner Name PONDERAY VALLEY FIBER

Well Street Address KINGS LAKE ROAD

City USK **County** PEND OREILLE

Location SW 1/4-1/4 NE 1/4 Sec 15 Twn 33 R 44 EWM or WWM ☑ check one

(Lat/Long (s, t, r Still **REQUIRED**) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No.

PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☑ Test Well ☐ Other ____

TYPE OF WORK: Owner's number of well (if more than one) #2

☑ New well ☐ Reconditioned ☐ Deepened *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Cable ☑ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 125 ft.
Depth of completed well 125 ft.

CONSTRUCTION DETAILS

Casing Installed: ☑ Welded 6 " Diam. from +1 ft. to 80 ft.
☐ Liner installed ____ " Diam. from ____ ft. to ____ ft.
☐ Threaded ____ " Diam. from ____ ft. to ____ ft.

Perforations: ☐ Yes ☑ No
Type of perforator used ____
SIZE of perfs ____ in. by ____ in. and no. of perfs ____ from ____ ft. to ____ ft.

Screens: ☐ Yes ☑ No ☐ K-Pac Location ____
Manufacturer's Name ____
Type ____ Model No. ____
Diam. ____ Slot size ____ from ____ ft. to ____ ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel/Filter packed: ☐ Yes ☑ No ☐ Size of gravel/sand ____
Materials placed from ____ ft. to ____ ft.

Surface Seal: ☑ Yes ☐ No To what depth? 20 ft.
Material used in seal BENTONITE SLURRY
Did any strata contain unusable water? ☐ Yes ☑ No
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

PUMP: Manufacturer's Name N/A
Type: ____ H.P. ____

WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 0 ft. below top of well Date 6-26-06
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☑ No If yes, by whom? ____
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest 0 gal./min. with stem set at N/A ft. for N/A hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analysis made? ☐ Yes ☑ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
GRAVEL, BOULDERS, SAND	0	65
CLAY WITH GRAVEL	65	125

RECEIVED
SEP 20 2006
Geology and Earth

Start Date 6-26-06 Completed Date 6-26-06

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☑ Driller ☐ Engineer ☐ Trainee Name (Print) GLEN FRACHISEUR

Driller/Engineer/Trainee Signature ____

Driller or trainee License No. 2544

Drilling Company INTERMOUNTAIN DRILLING

Address 3419 HIGHWAY 57

City, State, Zip PRIEST RIVER, ID 83856

If TRAINEE,
Driller's Licensed No. ____
Driller's Signature ____

Contractor's Registration No. INTERDIO88LD Date 7-06-06

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

- [x] Construction
- [ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* W 246115

CURRENT
Notice of Intent No. W 246115
Unique Ecology Well ID Tag No. AEK 341
Water Right Permit No.
Property Owner Name PONDERAY VALLEY FIBER
Well Street Address KINGS LAKE ROAD
City USK **County** PEND OREILLE
Location SW 1/4-1/4 NE 1/4 Sec 15 Twn 33 R 44 EWM or WWM [x] check one
(Lat/Long (s, t, r Still **REQUIRED**) Lat Deg Lat Min/Sec Long Deg Long Min/Sec
Tax Parcel No.

PROPOSED USE: [ ] Domestic [ ] Industrial [ ] Municipal [ ] DeWater [ ] Irrigation [x] Test Well [ ] Other

TYPE OF WORK: Owner's number of well (if more than one) #3
[x] New well [ ] Reconditioned *Method:* [ ] Dug [ ] Bored [ ] Driven [ ] Deepened [ ] Cable [x] Rotary [ ] Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 145 ft.
Depth of completed well 145 ft.

CONSTRUCTION DETAILS
Casing Installed: [x] Welded 6" Diam. from +1 ft. to 139 ft.
[ ] Liner installed " Diam. from ft. to ft.
[ ] Threaded " Diam. from ft. to ft.

Perforations: [ ] Yes [x] No
Type of perforator used
SIZE of perfs in. by in. and no. of perfs from ft. to ft.

Screens: [ ] Yes [x] No [ ] K-Pac Location
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel/Filter packed: [ ] Yes [x] No Size of gravel/sand
Materials placed from ft. to ft.

Surface Seal: [x] Yes [ ] No To what depth? 20 ft.
Material used in seal BENTONITE SLURRY
Did any strata contain unusable water? [ ] Yes [x] No
Type of water? Depth of strata
Method of sealing strata off

PUMP: Manufacturer's Name N/A
Type: H.P.

WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 0 ft. below top of well Date 7-04-06
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? [ ] Yes [x] No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Yield: gal./min. with ft. drawdown after hrs.
Yield: gal./min. with ft. drawdown after hrs.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 0 gal./min. with stem set at N/A ft. for N/A hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? [ ] Yes [x] No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
GRAVEL, BOULDERS, SAND	0	121
SAND, BROWN, FINE	121	140
CLAY WITH GRAVEL	140	145

Start Date 7-03-06 Completed Date 7-04-06

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

[x] Driller [ ] Engineer [ ] Trainee Name (Print) GLEN FRACHISEUR
Driller/Engineer/Trainee Signature
Driller or trainee License No. 2544
Drilling Company INTERMOUNTAIN DRILLING
Address 3419 HIGHWAY 57
City, State, Zip PRIEST RIVER, ID 83856

If TRAINEE,
Driller's Licensed No.
Driller's Signature

Contractor's Registration No. INTERDIO88LD Date 7-06-06

ECY 050-1-20 (Rev 3/05)

Ecology is an Equal Opportunity Employer.

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

- [x] Construction
- [ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* W246113

CURRENT
Notice of Intent No. W246113
Unique Ecology Well ID Tag No. AEK 342
Water Right Permit No.
Property Owner Name PONDERAY VALLEY FIBER
Well Street Address KINGS LAKE ROAD
City USK **County** PEND OREILLE
Location SW 1/4-1/4 NE 1/4 Sec 15 Twn 33 R 44 EWM or WWM [x] check one
(Lat/Long (s, t, r Still **REQUIRED**) Lat Deg Lat Min/Sec Long Deg Long Min/Sec
Tax Parcel No.

PROPOSED USE: [ ] Domestic [ ] Industrial [ ] Municipal [ ] DeWater [ ] Irrigation [x] Test Well [ ] Other

TYPE OF WORK: Owner's number of well (if more than one) #1
[x] New well [ ] Reconditioned [ ] Deepened
Method: [ ] Dug [ ] Bored [ ] Driven [ ] Cable [x] Rotary [ ] Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 110 ft.
Depth of completed well 110 ft.

CONSTRUCTION DETAILS
Casing Installed: [x] Welded 6" Diam. from +1 ft. to 110 ft.
[ ] Liner installed " Diam. from ft. to ft.
[ ] Threaded " Diam. from ft. to ft.

Perforations: [ ] Yes [x] No
Type of perforator used
SIZE of perfs in. by in. and no. of perfs from ft. to ft.

Screens: [ ] Yes [x] No [ ] K-Pac Location
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel/Filter packed: [ ] Yes [x] No [ ] Size of gravel/sand
Materials placed from ft. to ft.

Surface Seal: [x] Yes [ ] No To what depth? 20 ft.
Material used in seal BENTONITE SLURRY
Did any strata contain unusable water? [ ] Yes [x] No
Type of water? Depth of strata
Method of sealing strata off

PUMP: Manufacturer's Name N/A
Type: H.P.

WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 0 ft. below top of well Date 6-26-06
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? [ ] Yes [x] No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Yield: gal./min. with ft. drawdown after hrs.
Yield: gal./min. with ft. drawdown after hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 0 gal./min. with stem set at N/A ft. for N/A hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? [ ] Yes [x] No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
GRAVEL, BOULDERS, SAND	0	20
SAND, BROWN, FINE	20	94
CLAY WITH GRAVEL	94	96
SAND, GRAY, FINE	96	109
SHALE, GRAY	109	110

Start Date 6-21-06 Completed Date 6-26-06

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

[x] Driller [ ] Engineer [ ] Trainee Name (Print) GLEN FRACHISEUR
Driller/Engineer/Trainee Signature
Driller or trainee License No. 2544

Drilling Company INTERMOUNTAIN DRILLING
Address 3419 HIGHWAY 57
City, State, Zip PRIEST RIVER, ID 83856

If TRAINEE,
Driller's Licensed No.
Driller's Signature

Contractor's Registration No. INTERDIO88LD Date 7-06-06

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

WATER WELL REPORT

State of Washington Date Printed: **18-Jul-2006** Log No. **22706**

Construction / Decommission: Original Construction Notice **204277**

Construction

PROPOSED USE: **DOMESTIC**

TYPE OF WORK: Owners's Well Number: (If more than one well) **1**

NEW WELL Method: **ROTARY**

DIMENSIONS Diameter of well: **6** inches

Drilled **500** ft. Depth of completed well **500** ft.

CONSTRUCTION DETAILS:

Liner Installed: **PVC**

4 " Dia from **45** ft. to **500** ft.

Casing installed **WELDED**

6 " Dia from **+2** ft. to **109** ft.

" Dia from ft. to ft.

" Dia from ft. to ft.

Perforations: **Yes** Used In: **Liner**

Type of perforator used **SKILL SAW**

SIZE of perforations **6** in. b **1/4** in.

207 Perforation from **200** ft. to **500** ft.

Perforation from ft. to ft.

Perforation from ft. to ft.

Screens: **No** K-Pac Location

Manufacture's Name

Type: Model No

Diam. slot size from ft. to ft.

Diam. slot size from ft. to ft.

Gravel/Filter packed: **No** Size of Gravel

Material placed fro ft. to ft.

Surface seal: **Yes** To what depth **109** ft.

Seal method: Material used in seal **BENTONITE**

Did any strata contain unusable water **No**

Type of water Depth of strata

Method of sealing strata off

PUMP: Manufacture's name

Type: H.P. **0**

WATER LEVELS Land-surface elevation above mean sea level: **0** ft.

Static level **20** ft. below top of well Date **06/27/2006**

Artesian Pressure lbs per square inch Date

Artesian water controlled by

WELL TESTS: Drawdown is amount water level is lowered below static level.

Was a pump test made **No** If yes, by whom

Yield ____ gal/min with ____ ft drawdown after ____

Yield ____ gal/min with ____ ft drawdown after ____

Yield ____ gal/min with ____ ft drawdown after ____

Recovery data (time taken as zero when pump turned off)(water level measured from well top to water level

Time:	Water Level	Time:	Water Level	Time:	Water Level

Date of test:

Bailer test gal/min ft drawdown after hrs.

Air test **1** gal/min w/ stem set at **498** ft. for **1** hours

Artesian flow gpm Date

Temperature of water Was a chemical analysis made **No**

CURRENT

Notice of Intent No.: **W233890**

Unique Ecology Well I.D. No **APP845**

Water Right Permit Number:

OWNER: **EDMONDS, MELODY**

OWNER ADD **5428 LECLERC RD**

NEWPORT, WA 99156

Well Add **KINGS LAKE RD**

City: **Usk, WA 99180** County: **Pend Oreille**

Location: **SE** 1/4 **SW** 1/4 Sec **10** T **33** R **44E** EW

Lat/Long: (s, t, r still REQUIRED) Lat Deg Lat Min/Sec

Long Deg Long Min/Se

Tax Parcel No.:

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure. Show thickness of aquifiers and the kind and nature of the material in each stratum penetrated. Show at least one entry for each change in formation.

Material	From	To
TOP SOIL W/GRAVEL	0	1
BROWN CLAY W/GRAVEL	1	23
GRAVEL COBBLES BOULDERS	23	71
BROWN CLAY W/GRAVEL	71	77
BOULDER	77	78
BROWN CLAY W/GRAVEL	78	95
BROWN SOFT SHALE	95	111
MEDIUM GRAY SHALE	111	136
SOFT GRAY SHALE FRACTURED	136	174
MEDIUM GRAY SHALE	174	352
MULTI-COLORED SHALE W/WATER	352	500

RECEIVED

SEP - 1 2006

DEPARTMENT OF ECOLOGY
EASTERN REGIONAL OFFICE

Notes:

1 - 6" DRIVE SHOE

Work starte **06/22/2006** Complete **06/27/2006**

WELL CONSTRUCTION CERTIFICATION:

I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards. Materials used and the information reported are true to my best knowledge and belief.

☑ Driller ☐ Engineer ☐ Trainee

Name: **FORREST TENNANT II** License No.: **2687**

Signature: Forrest Tennant II

f trainee, Licensed driller is: License No.:

Licensed Driller Signature

Drilling Company:

NAME: **FOGLE PUMP & SUPPLY, INC.** Shop: **AIRWAY HEI**

ADDRESS: **PO BOX 1450**

Airway Heights, WA 99001

Phone: **(509) 244-0846** Toll Free: **(888) 343-9355**

E-Mail: **akk@foglepump.com**

FAX: **(509) 244-2875** WEB Site: **WWW.FOGLEPUMP.COM**

Contractor's Registration No.: **FOGLEPS095L4** Date Log Created: **07/18/200**

August 3, 2006

Mr. Wes Blore
Blue Mountain Leasing Company
P.O. Box 190
Usk, WA 99180

Subject: Hydrogeologic Reconnaissance and Evaluation of the Hermann Pit near Usk, Washington

Dear Mr. Blore:

LFR Inc. (LFR) is pleased to present Blue Mountain Leasing Company with this letter report regarding hydrogeologic conditions of the Hermann Pit located along Kings Lake Road in Pend Oreille County, Washington (the "Site"). This letter report was prepared to satisfy the requirements for the Application for Surface Mining Reclamation Permit 70-013067 as filed with the Washington Department of Natural Resources (DNR). Specifically, DNR requires additional information on the hydrogeology of the Site. As such, this letter report provides additional information based on a site visit on July 18, 2006 and review of logs for wells located on and off the Site.

SITE DESCRIPTION

The Site is located on Kings Lake Road approximately 5 miles northeast of Usk, Washington in the Northeast Quarter of the Southwest Quarter of Section 10, Township 33 North, Range 44 East, Willamette Meridian (Figure 1). The site covers approximately 40 acres of which the existing pit occupies approximately 7.1 acres. The main floor of the pit is approximately 2,823 feet above mean sea level (amsl). In comparison, nearby Skookum Creek (approximately 500 feet east-southeast of the southeast corner of the Site) is approximately 2,800 feet amsl.

The Site is bordered by private land that primarily consists of timber. Access to the Site is by a haul road that connects with Kings Lake Road at the southeast corner of the property. An intermittent creek flows along the west boundary of the Site from north to south. At the time of LFR's site visit, the creek disappears amongst cattails and other vegetation in an open area located just beyond the southwest portion of the Site and near a hunting cabin located on adjacent property.

The only infrastructure present on the Site are three test wells. The test wells were installed between June 21 and July 4, 2006 by Intermountain Drilling. Three stockpiles of sand and gravel are located in the southeast portion of the Site in the area that is actively mined.

509.535.7225 m
509.535.7361 f
3810 East Boone Avenue, Suite 306
Spokane, Washington 99202-4561
Offices Nationwide
www.lfr.com

HYDROGEOLOGIC CONDITIONS

The geology and hydrogeology of the Site are described in the "Application for Surface Mining Reclamation Permit 70-013067" prepared by Ecological Land Services, Inc. and dated January 23, 2006. According to the aforementioned document, the Site is located within the Skookum Creek drainage about 2 miles east of the Pend Oreille River and is primarily comprised of glacial till and outwash deposits. The till is the dominant glacial deposit and is composed of unstratified to poorly stratified deposits of subangular to rounded pebbles, cobbles, and boulders in an unsorted matrix of sand, silt, and clay. Glacial outwash borders the till to the northwest and is likely found in that portion of the property. It differs from the till only in that the sediments are more stratified due to the mechanics of their deposition.

As was observed during LFR's site visit, exposed sand and gravel beds of varying thickness from one to several feet dipped to the south at approximately 30 degrees. The dipping beds were truncated by a near-horizontal layer of clay that varied in thickness. This bedding is indicative of the deposition patterns commonly found throughout the region for sand and gravel deposits associated with Glacial Lake Missoula flood events. The clay layer was located approximately two-thirds of the total height of the high wall. It was also noted that the clay layer may be discontinuous in places. Alluvium comprised of poorly sorted sand and gravel in near horizontal beds overlies the clay layer.

The intermittent spring observed within the pit discharges from a point on the west high wall approximately 10 to 15 feet above the pit floor. The spring flows down the face of the high wall onto the pit floor where it infiltrates back into the subsurface approximately 20 feet away from its discharge point. At the time of LFR's site visit, the spring was flowing at several gallons per minute. The point at which the spring discharges appears to coincide with a discontinuous clay layer within the stratified sand and gravel. The clay unit appears to form a barrier for perched groundwater to flow across. The spring appears to be primarily fed by the losing portion of the intermittent creek located west of the pit. Flow from the creek most likely infiltrates downward through the sand and gravel until it encounters a flow barrier such as a clay layer. The perched water then flows along the top of the clay layer until the layer pinches out. Subsurface flow then moves again downwards until it encounters another clay layer or daylights within the pit.

Review of drill logs for three test wells recently installed at the site and a water well located 550 feet south of the site indicate varying thicknesses of coarse and fine materials (Figure 2). Well AEK 340, which is located along the access road on the pit floor, encountered approximately 20 feet of sand, gravel, and boulders, which is the primary material mined at the pit. The base of this material in AEK 340 is approximately 2,803 feet amsl. Based on the well logs, the basal contact of the sand, gravel, and boulders unit is not horizontal. Assuming that the basal contact is continuous and planar, a three-point analysis results in the basal contact of sand, gravel, and boulders strikes approximately N40°W and dips approximately 9° NE.

Test wells AEK 341 and AEK 342 are located above the pit and were extended to depths of 125 and 145 feet below ground surface (bgs), respectively. The bottom elevations for AEK 341 and AEK 342 are 2,813 and 2,799 feet amsl, respectively. Groundwater was not encountered in either

of these test wells. The base of the sand, gravel, and boulders in these two wells was encountered at depths of 65 and 121 feet bgs, respectively (2,873 and 2,823 feet amsl, respectively). In test wells AEK 340 and AEK 342, fine sand was encountered below the sand, gravel, and boulders. Clay with gravel was encountered below the sand, gravel, and boulders in test well AEK 341. In well APP 845, clay with gravel was encountered to a depth of 23 feet bgs (2,835 feet amsl). The sand, gravel and boulder unit was encountered below the clay unit to a depth of 71 feet bgs (2,787 feet amsl). Comparatively, the base of the sand and gravel unit in APP 845 is lower in elevation than found in the three test wells.

The overall topography of the drainage suggests that groundwater flow is to the south coincident with the direction of stream flow in Skookum Creek. Groundwater was encountered in test well AEK 340 at approximately 59 feet bgs (2,764 feet amsl). Although groundwater was encountered in only one of the test wells, the elevation of groundwater encountered in test well AEK 340 relative to the elevation of nearby Skookum creek indicates a hydraulic gradient away from the creek towards the test well, thus suggesting that this reach of Skookum Creek is losing. This condition is further evidenced by the presence of the coarse sand and gravel unit that is near the surface. The log for water well APP 845 indicates a static water level of 20 feet bgs. Based on the absence of water in test wells AEK 341 and AEK 342 and the depth to groundwater in test well AEK 340, this groundwater level is most likely perched groundwater encountered at the time of drilling.

PIT OPERATIONS

LFR understands that Blue Mountain Leasing Company owns and operates the Hermann Pit for the purpose of producing sand and gravel. The sand and gravel is used primarily as a base for Ponderay Valley Fibre's sawmill in Usk. Activities at the pit include extraction, stockpiling, and loading trucks for off site transport. On an intermittent basis, some crushing and screening takes places to fill specific orders. The estimated annual production of sand and gravel is approximately 120,000 cubic yards and would be mined throughout the year with the exception of during the spring breakup of roads.

LFR understands that the pit can only be excavated to no less than 20 feet above the aquifer (groundwater elevation is at approximately 2,764 feet bgs). Given the depth of the sand and gravel encountered in test well AEK 340 (2,803 feet amsl), the deepest elevation for the mineable material is approximately 39 feet above the water table.

Pit operations require the use and storage of small quantities of hazardous substances including diesel fuel, oils, and lubricants. No fuel is stored on site other than the slip tanks of a pickup. The largest volume anticipated would be less than 200 gallons of diesel fuel. Quantities of other hazardous substances used onsite as part of the pit operations are relatively minor in comparison to the presence of any fuel.

MITIGATION MEASURES

LFR recommends that the following mitigation measures be implemented, particularly during times of pit operations to address storage, useage, and containment of hazardous substances. Although only mentioned here, these measures should be described in greater detail in a Spill Prevention, Control, and Countermeasures (SPCC) Plan, if one already has been written. Measures to address these conditions include: no permanent storage of fuels or petroleum products at the Site; temporary storage conditions for such substances; primary and secondary containment requirements; a description of spill response measures; and inspection, audit, and reporting requirements.

The physical characteristics of the predominant hazardous substance that would be temporarily stored onsite (e.g., diesel) are such that its mobility in both above the water table (unsaturated zone) and below the water table (saturated zone) is very limited. Diesel fuel is highly hydrophobic and tends not to form large soluble plumes of contamination once introduced into an aquifer setting. In other words, diesel fuels tend not to migrate readily and prefer to attach itself to any available solid material.

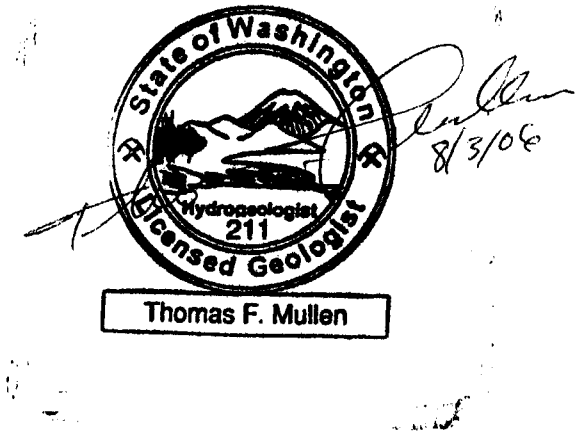
To further mitigate the effects of a spill and given the minimal amount of fuel on site at any given time, a designated fueling area should be established away from the seasonal seep. This fueling area should be graded for control of surface water, storm water containment, and possible swale treatment in the event that a spill does occur. The fueling truck (i.e., pickup with slip tanks) should be equipped with an appropriate spill kit. The use of drip pans under all pump hose fittings as well as spill containment equipment such as spill barriers should be placed appropriately. Additional measures might include temporarily diverting seep waters into a recharge area that is isolated from the active operating area(s), thereby avoiding impact to the recharging water.

LIMITATIONS

This evaluation addresses basic groundwater conditions such as water table surface and general flow direction given the limited amount of information for the Site and the surrounding area. Further, this evaluation assesses the relationship of the seep within the pit area to the geology and nearby surface waters. It should be noted, however, that this scope of work cannot provide a comprehensive hydrogeologic characterization. Only through the drilling, installation, testing, and sampling of additional monitoring wells or piezometers can such an evaluation be conducted, but is not considered necessary at this time.

If you have any questions regarding this proposal or if we can be of assistance in any manner, please feel free to contact me at (509) 535-7225 or Jim De Smet at (208) 765-2308.

Sincerely,

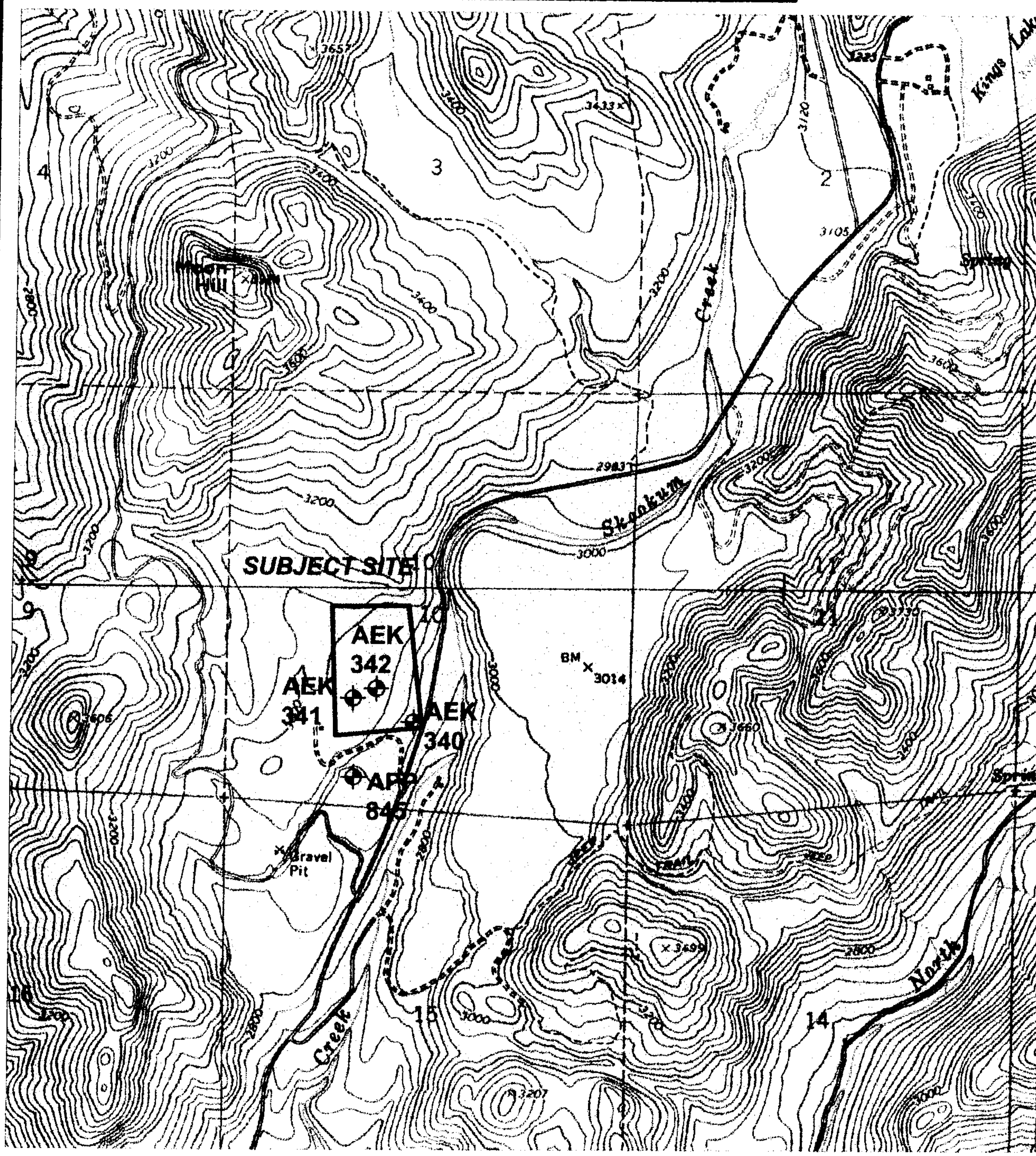


Thomas F. Mullen, L.HG.
Senior Hydrogeologist

Jeffrey Leppo, L.G.
Principal Scientist

TFM:bms

DRAWN BY: JASPER GEOGRAPHICS 080306 CHECKED BY: TFM AUGUST 2006 PROJECT # 003-09411-00



MAP SOURCE:
USGS 7.5 TOPOGRAPHIC MAP
SKOOKUM CREEK & BROWNS LAKE, WASHINGTON (1986)

N

0 2000 FEET

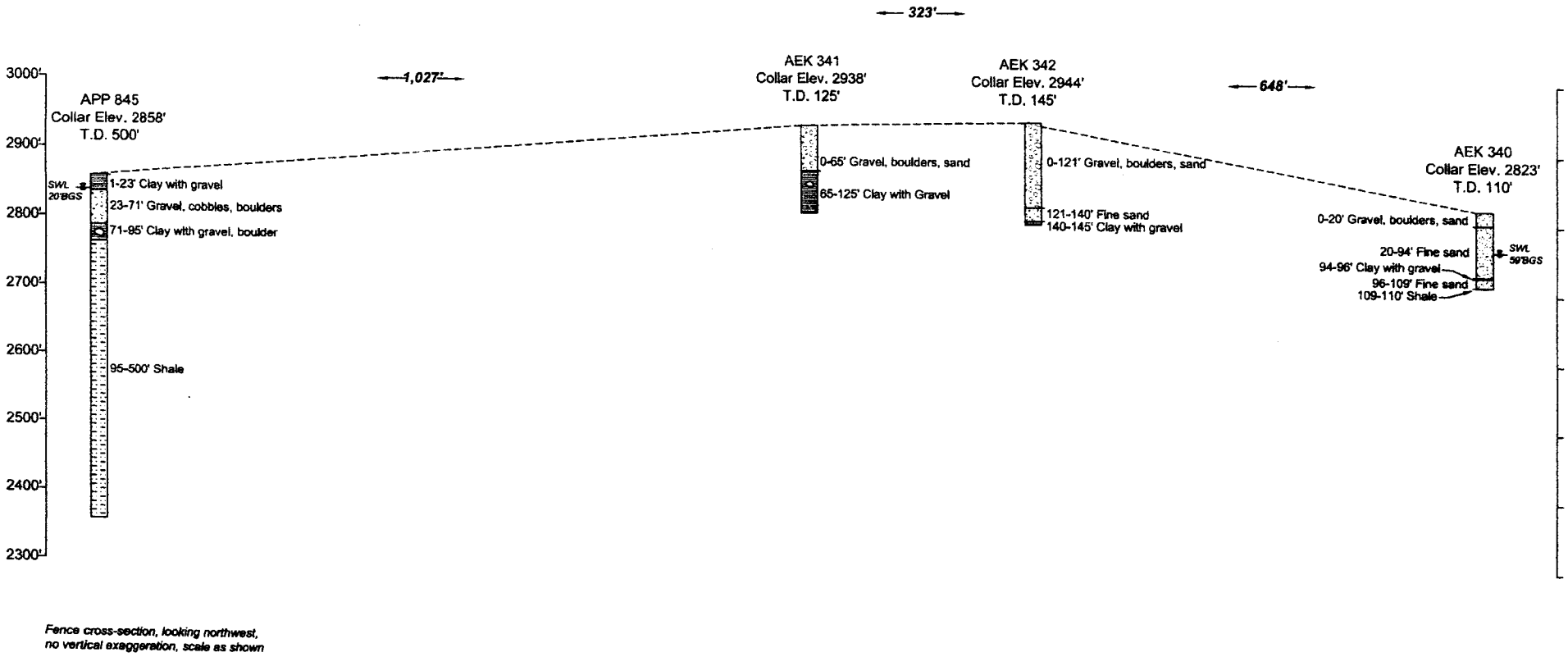
VICINITY MAP

HERMANN PIT
Blue Mountain Leasing Company
Pend Oreille County, Washington
Section 10, Township 33N, Range 44E, W.M.

LFR

Figure 1

DRAWN BY: JASPER GEOGRAPHICS 080306 CHECKED BY: TFM AUGUST 2006 PROJECT # 003-09411-00



Fence cross-section, looking northwest, no vertical exaggeration, scale as shown

Well Log Cross-Section

HERMANN PIT
Blue Mountain Leasing Company
Pend Oreille County, Washington
Section 10, Township 33N, Range 44E, W.M.

LFR

Figure 2